

Mineral Industry Surveys

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TIN IN JANUARY 2003

Domestic consumption of primary tin in January was estimated by the U.S. Geological Survey to be 3% higher than in December 2002 and 2% lower than in January 2002. The Platts Metals Week average composite price for tin in January 2003 was \$3.14 per pound, 4% higher than that in December 2002 and 12% higher than in January 2002.

The largest tin producer in Brazil, Grupo Paranapanema, produced 8,900 metric tons (t) of tin in 2002, about the same as the prior year, and expected to produce similar amounts for 3 more years using ore tailings from its own Pitinga Mine. Previously one of the world's largest cassiterite mines, Pitinga's alluvial deposits have been exhausted. Company officials indicated that it is possible for them to import tin ore to process at their Mamoré tin smelter. At its peak in the late 1980s and early 1990s, the Mamoré tin smelter produced about 22,000 t annually. Traditionally, the smelter exported 75% to 80% of its refined tin output.

Not only Paranapanema, but other producers, such as Companhia Estanífera Brasileira SA (Cesbra) and Best Metais e Soldas SA, are producing considerably less tin due to the general depletion of alluvial cassiterite deposits, particularly at the Garimpo Bom Futuro (a cooperative of independent miners). Following disorganized and uncontrolled mining at the Bom Futuro Mine in 1989, Paranapanema moved in to instill some order, purchasing large quantities of the cassiterite produced there from the garimpiero cooperatives, as did Brazil's other main tin producers, though to a lesser degree. Bom Futuro ore was attractively priced, as it did not carry the high overhead that Paranapanema experienced at its Pitinga Mine.

Paranapanema has been working for a number of years to develop its Rocha Sã mining project, which would produce tin, tantalum, and niobium ore near the existing Pitinga Mine. The company now expresses uncertainty about sources for the \$400 million needed to finance the project, particularly as the project is not a priority of Banco do Brasil's pension fund, Previ, Paranapanema's largest shareholder (American Metal Market, 2003).

Reports from the China Nonferrous Metals Association indicate that China's 2002 output of tin-in-concentrate declined 16% to 62,000 t, while its production of refined tin metal rose

19% to 75,000 t (Metal Pages, 2003a§¹). Yunnan Tin Co. Ltd. (China) announced that it planned to produce 28,000 tons of refined tin up from 20,000 t of refined tin in 2002 (China Metal Market, 2003§).

Marlborough Resources NL (Australia) announced an expansion of its Ardlethan tin project in New South Wales that could result in an increase of tin-in-concentrate production to 1,500 metric tons per year (t/yr). The main cost would be for additional water supply, a scrubber plant, piping, and pumping. Work was scheduled to start in February 2003 with completion by April 2003 (Metal Bulletin, 2003b).

Malaysia Smelting Corp. Berhad (MSC) has agreed to acquire a 30% stake in Marlborough Resources NL. The acquisition will raise \$5.3 million to fund an expansion at Marlborough's Ardlethan tin operations in New South Wales, Australia. The agreement also permits Marlborough to access MSC's tin mining expertise (Metal Pages, 2003b§).

Government-owned PT Timah (Indonesia) has reportedly agreed construct a new tin smelter with MSC in a joint venture. The plant, with a capacity of 3,000 t/yr, is expected to be built on Kundur Island in Riau Province (Indonesia) in 2004. Also, Timah plans to restart five dredges in waters near Bangka Island in response to rising tin prices (Mining Journal, 2003).

A new report from the metals market research firm, CRU International Ltd., forecasts that the tin market is heading for a supply deficit of up to 15,000 t by the second half of 2003, as producers fail to keep up with global consumption. CRU lists the world's top five tin producers in 2002 as follows (Metal Bulletin, 2003c):

¹ References that include a section twist (§) are found in the Internet References Cited section.

Company	Country	Mine production (Metric tons)	Refinery production (Metric tons)
PT Tambang Timah TBK	Indonesia	54,639	42,725
Minsur S.A.	Peru	38,815	35,862
Malaysia Smelting Co.	Malaysia	—	30,887
Yunan Tin Industry Co.	China	—	29,375
PT Koba Tin Co.	Indonesia	23,927	16,095

Over the past 20 years one of the important uses of tin has been as a component of indium-tin oxide (ITO), mostly for electronic flat panel displays. This end use has been growing rapidly. Moreover, there seems to be no effective substitute for it. ITO is used in thin film transistors to convert data from electrical to optical form in liquid crystal displays, flat panel displays, and more recently in plasma display panels. Although there has been a trend to reduce the ITO content in individual liquid displays, many more units are sold; thus, demand for ITO has continued to grow (Metal Bulletin, 2003a).

In Germany, a new federal law implemented on January 1 requires a deposit of ? 0.25 to ? 0.50 per container to be charged on the sale of beverages in metal, glass, and plastic containers—a deposit which is recovered when the empty container is returned. Beverage container sales have plummeted because customers dislike the inconvenience of being forced to return to the point of sale to recover the deposit. Consequently, retailers are now attempting to develop a nationwide program for installing 60,000 so-called “reverse vending” machines that will allow customers to recover their deposit in exchange for empty drink containers. Demand for tin has already been affected because most metal drink cans in Germany are made from tinplate (Platts Metals Week, 2003).

Tin Technology (United Kingdom), formerly known as the International Tin Research Institute, has acquired the World Bureau of Metal Statistics (Tin International, 2003).

Update

On March 14, 2003, the Platts Metals Week composite price for tin was \$3.19 per pound.

References Cited

- American Metal Market, 2003, From boom to bust—Brazil backpedals as tin reserves shrink: American Metal Market, v.111, no. 6, February 10, p. 11.
- Metal Bulletin, 2003a, Indium displays clear growth: Metal Bulletin, no. 8748, February 13, p. 7.
- Metal Bulletin, 2003b, Marlborough to boost tin concentrate output: Metal Bulletin, no. 8745, February 3, p. 4.
- Metal Bulletin, 2003c, Tin market to tip into deficit this year—CRU: Metal Bulletin, no. 8749, February 17, p. 8.
- Mining Journal, 2003, Timah plans new smelter: Mining Journal, v. 340, no. 8722, February 7, p. 92.
- Platts Metals Week, 2003, German recycling law slashes demand for steel drink cans: Platts Metals Week, v. 74, no. 6, February 10, p. 1, 7.
- Tin International, 2003, Tin Technology acquires statistics group: Tin International, v. 76, no. 1, p. 15.

Internet References Cited

- China Metal Market, Lead, Zinc and Tin Monthly, 2003 (February), Yunnan Tin, accessed March 5, 2003, at URL <http://www.antaik.com>.
- Metal Pages, 2003a (February 26), China’s 2002 production figures, accessed February 27, 2003, at URL <http://www.metal-pages.com>.
- Metal Pages, 2003b (March 3), Malaysia Smelting Corp. to buy 30% in Marlborough Resources, accessed March 4, 2003, at URL <http://www.metal-pages.com>.

TABLE 1
SALIENT TIN STATISTICS 1/

(Metric tons, unless otherwise noted)

	2002 p/	2002	2003
		December	January
Production, secondary e/ 2/	10,800	900	900
Consumption:			
Primary	35,800	3,050 r/	3,150
Secondary	10,800	761	665
Imports for consumption, metal	42,200	3,090	NA
Exports, metal	2,940	323	NA
Stocks at end of period	7,280	7,280 r/	7,010
Prices (average cents per pound): 3/			
Metals Week composite 4/	291.97	302.37	313.84
Metals Week New York dealer	194.75	202.78	211.89
London, standard grade, cash	184.00	192.00	201.00
Kuala Lumpur	184.35	192.76	201.52

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available.

1/ Data are rounded to no more than three significant digits, except prices.

2/ Includes tin recovered from alloys and tinplate. The detinning of tinplate (coated steel) yields only a small part of the total.

3/ Source: Platts Metals Week.

4/ The Metals Week composite price is a calculated formula, not a market price, that includes fixed and finance charges, and a risk factor. It is normally substantially higher than other tin prices.

TABLE 2
METALS WEEK COMPOSITE PRICE 1/

(Cents per pound)

Period	High	Low	Average
2002:			
January	287.97	277.20	280.68
February	280.03	267.12	273.15
March	283.34	276.69	278.81
April	291.33	283.90	288.55
May	299.15	290.78	296.72
June	311.49	299.48	304.92
July	316.83	290.53	308.64
August	286.95	272.37	279.74
September	295.72	277.95	286.19
October	308.99	294.63	302.39
November	306.01	297.88	301.54
December	306.94	298.78	302.37
Year	316.83	267.12	291.97
2003:			
January	320.43	303.14	313.84

1/ The Metals Week composite price is a calculated formula, not a market price that includes fixed and finance charges, and a risk factor. It is normally substantially higher than other tin prices.

Source: Platts Metals Week.

TABLE 3
TINPLATE PRODUCTION AND SHIPMENTS IN THE UNITED STATES 1/

(Metric tons, unless otherwise noted)

Period	Tinplate waste (waste, strips, cobble, etc.) (gross weight)	Tinplate (all forms)			Shipments 2/
		Gross weight	Tin content	Tin per metric ton of plate (kilograms)	
2002 p/	61,100	2,400,000	7,440	3.1	2,100,000
2002:					
December	6,560	215,000	652	3.0	158,000
2003:					
January	2,790	216,000	642	3.0	NA

p/ Preliminary. NA Not available.

1/ Data are rounded to no more than three significant digits.

2/ Source: American Iron and Steel Institute monthly publication.

TABLE 4
U.S. TIN IMPORTS FOR CONSUMPTION AND EXPORTS 1/

(Metric tons)

Country or product	2001	2002		January- December
		November	December	
Imports:				
Metal (unwrought tin):				
Bolivia	6,040	566	586	6,150
Brazil	5,510	400	425	4,840
Chile	122	--	(2/)	20
China	6,360	498	248	7,600
Hong Kong	20	--	--	--
Indonesia	3,880	160	120	3,340
Malaysia	674	--	20	20
Peru	14,000	1,120	1,650	19,900
Russia	143	--	--	21
Singapore	145	--	--	--
United Kingdom	118	--	--	2
Other	434	39	40	346
Total	37,500	2,780	3,090	42,200
Other (gross weight):				
Alloys	3,830	419	381	3,530
Bars and rods	539	23	43	224
Foil, tubes, pipes	1	--	--	1
Plates, sheets, strip	529	3	--	128
Waste and scrap	3,700	32	35	561
Miscellaneous	13,900	195	266	7,810
Total	22,500	672	725	12,300
Exports (metal)	4,350	239	323	2,940

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5
CONSUMPTION OF TIN IN THE UNITED STATES, BY FINISHED PRODUCT 1/

(Metric tons of contained tin)

Product	2002 p/	2002 December			2003 January		
		Primary	Secondary	Total	Primary	Secondary	Total
Alloys (miscellaneous)2/	1,660	125 r/	W	125 r/	157	W	157
Babbitt	501	19	18	37	19	W	19
Bar tin and anodes	192	13	W	13	16	W	16
Bronze and brass	2,390	72	96	168	92	73	165
Chemicals	7,550	630	W	630	697	W	697
Collapsible tubes and foil	W	W	W	W	W	W	W
Solder	14,500	871	339	1,210	836	263	1,100
Tinning	411	33	--	33	32	--	32
Tinplate 3/	7,440	622 r/	--	622 r/	642	--	642
Tin powder	W	W	W	W	W	--	W
White metal 4/	W	W	W	W	W	--	W
Other	1,110	62 r/	8	70 r/	60	29	89
Total reported	35,800	2,450 r/	461	2,910 r/	2,550	365	2,920
Estimated undistributed consumption 5/	10,800	600	300	900	600	300	900
Grand total	46,600	3,050 r/	761 r/	3,810 r/	3,150	665	3,820

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other." -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes terre metal.

3/ Includes secondary pig tin and tin components of tinsplating chemical solutions.

4/ Includes pewter, britannia metal, and jewelers' metal.

5/ Estimated consumption of plants reporting on an annual basis.